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EXAMINER	
CHEN, WENPENG	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/879,467	DURBIN ET AL.	
	Examiner	Art Unit	
	Wenpeng Chen	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-21,24-30,32-40,43 and 45-52* is/are rejected.

7)☒ Claim(s) *22-23, 31, 41-42, 44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Examiner's responses to Applicant's remark

1. Applicants' arguments filed on 12/16/2005 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited references to reasonably and properly meet the claimed limitations.

a. Applicants' argument -- For Claim 19, Applicants cited passage in column 51, lines 39-41 and 58-62 of Postman and made conclusion that Postman clearly processes only one image at a time to effect decoding thereof. Claim 19 requires the non-dedicated second processing circuit, having the plurality of undecoded images available at a time, attempted decode processing of said plurality of undecoded images (each image representing information concerning a coded target as a whole.)

Examiner's response -- Examiner likes to point out that the Examiner referred to passage in column 51, lines 39-41 and 58-62 of passage for teaching an optical system in a capture system. The limitation "having the plurality of undecoded images available at a time" is related to the feature of "a host system" recited in Claim 19. The Examiner does not understand how the optical system is related to the limitation in Applicants' argument. For example, the optical system can capture one image at a time and store them as a batch. The host system then can processes the batch of image data. The Examiner especially cited the passages in column 34, lines 26-37 and column 51, line 38 to column 52, line 6 for a teaching of the feature "having the plurality of undecoded images available at a time". The Applicants were just silent about this citation.

b. Applicants' argument -- Claims 20, 21, 24, 26 - 30, 32 and 34 are similarly entirely distinct from the teachings of Postman.

Examiner's response -- If the Applicants referred to the argument above, the Examiner's response above is also applied here. If Applicants did not refer to the above argument, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

c. Applicants' argument -- Claims 39, 40, 43, 45.-47, 49, and 50 are clearly patentable over Postman.

Examiner's response -- Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

d. Applicants' argument -- For Claims 25 and 35, there is (1) no suggestion in the prior art of applying a teaching re picture-image compression as in Park, to the bar code reading field as in Postman, and (2) no teaching in Postman that a reference uncoded image and a plurality of further uncoded images could be decoded.

Examiner's response -- With regard to point (1), it is well known and obvious to one of ordinary skill in the art of image procession, including processing image of barcode, to compress data for efficient storage and transmission. Therefore, the combination is valid. With regard to point (2), the response for Postman's teaching has been given above.

e. Applicants' argument -- Claims 33 and 52 are clearly patentable over references cited in the Office Actions.

Examiner's response -- Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

f. Applicants' argument -- Claim 36 is clearly patentable over references cited in the Office Actions.

Examiner's response -- The response for Postman's teaching has been given above.

g. Applicants' argument -- Claims 37 and 38 are clearly patentable over references cited in the Office Actions.

Examiner's response -- Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Examiner's response -- The response for Postman's teaching has been given above.

h. Applicants' argument -- Claims 19 and 20 are clearly patentable over references cited in the Office Actions. Tamura points away from Applicants' teaching of "selectively directing the processing circuit to decode the plurality of undecoded images each representative of said the same coded image."

Examiner's response -- Although Tamura teaches decoding images from different barcodes, Tamura does not indicate that its teaching only applied to decoding different barcodes

and should not be used for repetitive images of a same barcode. Therefore, there is no "teaching-away" issue.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 19-21, 24, 26-30, 32, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Postman et al. (US patent 6,041,374 cited previously.)

a. Claims 19, 21, 24, 27-30, 32, and 34

With regard to Claim 19, Postman teaches a coded image capture and decoding system (Figs. 23-24, 37) comprising:

-- a capture system comprising (column 7, line 52 to column 8, line 37; column 50, line 53 to column 52, line 12; especially column 52, lines 7-12; combination of blocks 505 and 510 of Fig. 23; combination of blocks 505 and 520 of Fig. 24; combination of blocks 776 and 806 of Fig. 37):

- an optical system that captures image data from coded targets, so as to generate a plurality of image data groups each representing information concerning a coded target as a

whole; (column 7, line 52 to column 8, line 37; column 51, lines 39-57; column 52, lines 7-12; the undecoded barcode scan engine 806 of Fig. 37; A semiconductor visible light laser diode 14 emits a coherent light beam to scan a barcode. The scan rate can be any desired rate, but generally a rate of 200 scans per second is typical. As shown in column 51, lines 39-41 and 58-62, a predetermined number of samples are scanned and stored. The signal comprises the plurality of image data groups each representing information concerning a coded target as a whole.)

- a first processing circuit, coupled to the optical system, that generates a plurality of undecoded images each based on one of the image data groups received from the optical system, so that the plurality of undecoded images each represents information concerning a coded target as a whole; (column 7, line 52 to column 8, line 37; column 50, line 53 to column 52, line 12; the electronic parts receiving signal from photodiode 24 and generating data inputting to PC card; elements in block 776 of Fig. 38 except latch 820 comprising the first processing circuit; column 51, lines 1-14; Column 50, lines 48-56 teaches that the signal data are of undecoded images. The digitized signal outputted from element 816 comprises the plurality of undecoded images.)

- an image buffer, coupled to the first processing circuit, that stores the plurality of undecoded images generated by the first processing circuit; (column 34, line 26 to column 35, line 58; memory 514 and memory 524; element 820 of Fig. 38; column 51, lines 1-14; As shown in column 51, lines 39-41 and 58-62, a predetermined number of samples are stored in the PC card.)

-- a host system comprising (block 500 of Figs. 23-24; host 500 of Fig. 37):

- a non-dedicated second processing circuit, for coupling to the image buffer, that, after the plurality of undecoded images each represents information concerning a coded target as a whole, are stored in the image buffer, after a request by the capture system, and with the non-dedicated second processing circuit having received the plurality of undecoded images from the image buffer so as to have the plurality of undecoded images available at a time for processing, attempts decoding processing of the plurality of undecoded images. (column 7, lines 25-51; column 34, line 26 to column 35, line 58; especially the passage in column 34, lines 26-37; column 51, line 38 to column 52, line 6; The interrupts sent by the PC card is the request. The PDA and personal computer are general-use computers and thus contain no processing circuit dedicated to a specific application. The circuit under control of CPU and a computer program, such as software 798 of Fig. 37, dynamically changes portion of the CPU circuit to perform a specific job such as decoding at a time. The decoded alphanumeric character or characters are the result of the decoding processing.)

For Claim 21, Postman teaches that the capture system sends an interrupt signal that is a request and also a notification to the non-dedicated second processing system. With this in mind, comparing the recitations of Claim 21 with those of Claim 19, we can conclude that the citations for teaching the features of Claim 19 also teach each feature recited in Claim 21.

For Claim 24, Postman further teaches:

-- wherein the optical system captures two dimensional coded image data from the two dimensional code of a coded target, so as to generate a plurality of two dimensional coded image data groups each representing information concerning the same two dimensional code as a whole, the first processing system supplying a plurality of undecoded two dimensional coded

images each representing the same two dimensional code; and the non dedicated second processing system having said plurality of undecoded two dimensional coded images available at one time for processing, attempts decode processing thereof. (Passage in column 33, lines 24-57 teaches that Postman's system can also used for capturing and decoding 2D barcodes. Two dimensional barcodes are captured. Combined with citations for teaching the features of Claim 21, Postman also teaches this feature.)

With regard to Claims 27-28, as explained above for Claims 21 and 24, Postman teaches the method of processing optically read two-dimensional code images from a two dimensional code of a two dimensional coded target recited in the claims.

With regard to Claim 29, Postman teaches:

-- wherein the optically read two-dimensional images are read from the two dimensional optical code by an array of photo detectors capable of capturing reflections from the entire two dimensional coded target. (column 50, lines 34-37; The CCD imaging type device meets the requirement.)

With regard to Claim 30, Postman teaches:

-- wherein at least five two dimensional images are read from the same two dimensional code of the two dimensional coded target before the non dedicated processor is signaled to process the information in the image buffer. (The passage in column 8, lines 1-7 teaches that 200 scans per second of image capturing is typical. The passage in column 57, lines 19-24 teaches that a user triggers the scanning process. It is evidently that the triggering action takes more than 0.1 sec for a common user. Therefore, at least 10 images are captured.)

For Claim 32, as explained above for Claims 21, 24, and 29, Postman also teaches the coded image capture and decoding system recited in Claim 32. (Because a CCD imager can be used for capturing 2D barcode, Postman's code capture system has a field of view encompassing a complete optical code configuration.)

For Claim 34, Postman further teaches:

-- wherein said processing system being operative to effect a decoding process that comprises attempts to decode a first received set of undecoded data based on an optical reading of said optical code configuration, and if unsuccessful continues the decoding process by attempting to decode a second received set of undecoded data based on another optical reading of the same optical code configuration. (Fig. 7)

b. With regard to Claims 20 and 26, Postman teaches a coded image capture and decoding system comprising:

-- a remote capture unit comprising (column 7, line 52 to column 8, line 37; column 50, line 53 to column 52, line 12; especially column 52, lines 7-12; combination of blocks 505 and 510 of Fig. 23; combination of blocks 505 and 520 of Fig. 24; combination of blocks 776 and 806 of Fig. 37):

- an image buffer that stores a plurality of undecoded images each representative of the same coded target; (column 34, line 26 to column 35, line 58; memory 514 and memory 524; element 820 of Fig. 38; column 51, lines 1-14; A predetermined number of samples are scanned and outputted as signal 804 of Fig. 37. The signal comprises the plurality of image data groups. The digitized signal outputted from element 816 comprises the plurality of undecoded images.)

-- a host image processing unit, operably coupled to the remote capture unit, (block 500 of Figs. 23-24; host 500 of Fig. 37), the host image processing unit comprising:

- a processing circuit operable to effect decoding of undecoded images; (column 51, line 39 to column 52, line 6; The part of circuit programmed by the barcode decode software.)

-- code processing circuitry, communicatively coupled to the processing circuit, selectively directing the processing circuit to decode the plurality of undecoded images, each representative of the coded target. (column 51, line 39 to column 52, line 6; The part of circuit loaded with the barcode client application 786 is the code processing circuit for directing and controlling the decoding process. The PDA and personal computer are general-use computers and thus contain no processing circuit dedicated to a specific application. The circuit under control of CPU and a computer program, such as software 798 of Fig. 37, dynamically changes portion of the CPU circuit to perform a specific job such as decoding at a time. The decoded alphanumeric character or characters are the result of the decoding processing. The interrupts sent by the PC card request selection of decoding process.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 39-40, 43, 45-47, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Postman et al. (US patent 6,041,374 cited previously.)

Postman teaches parent Claim 32 of the list claims in the embodiment cited above. However, it is not evidently clear that the cited embodiment also includes the screening system recited in the listed claims.

Postman teaches in column 50, lines 22-68 that decoding can be performed in the host or PC card. Postman also teaches in another embodiment:

-- wherein the code capture system comprises a screening system for evaluating the sets of undecoded data as generated by the code capture system as good or bad scans; (column 15, lines 36-47)

-- wherein the screening system examining the number of transitions in each of the sets of undecoded data to evaluate such sets of undecoded data as appearing to represent a valid optical code configuration; (column 13, line 66 to column 14, line 7; When there are no transitions, the captured image is not of a valid code.)

-- wherein the screening process comprising evaluating the length of the quiet zones of the plurality of sets of undecoded data; (column 15, lines 36-47; The region associated with "0" is considered as a quite zone because no printing information exists.)

-- screening process comprising evaluating the length of the plurality of sets of undecoded data; (column 15, lines 36-47; The length of "1" and "0" regions are evaluated.)

-- screening and selecting only those sets of undecoded data that appear to represent a valid optical code configuration with respect to one of a plurality of code types; (column 14, lines 38-68)

-- screening process comprising evaluating the proximity to the optical code configuration during the optical readings of the optical code configuration and starting capturing of barcode. (column 21, lines 40-66; Only images are captured only when a barcode is close.)

It is desirable to have efficient decoding of barcodes. This can be achieved with avoiding decoding of bad scans. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the teachings in two separate embodiments of Postman to include the screening in the embodiment shown in Fig. 37 in the PC card and transmit data of the selected scans to the host for decoding because the combination provides an efficient decoding. The combination thus teaches the feature:

-- wherein the code capture system comprises a screening system for evaluating the sets of undecoded data as generated by the code capture system, and transmits to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration;

-- wherein the code capture system comprises a screening system for evaluating the sets of undecoded data as generated by the code capture system, and which transmits to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration, the screening system examining the number of transitions in each of the sets of undecoded data to evaluate such sets of undecoded data as appearing to represent a valid optical code configuration;

-- wherein the code capture system comprises a screening system operative to apply a screening process fox evaluating the sets of undecoded data as generated by the code capture system, and transmits to the processing system only those sets of undecoded data that appear to

represent a valid optical code configuration, said screening process comprising evaluating the length of the quiet zones of the plurality of sets of undecoded data;

-- wherein the code capture system comprises a screening system operative to apply a screening process for evaluating the sets of undecoded data as generated by the code capture system, and transmits to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration, said screening process comprising evaluating the length of the plurality of sets of undecoded data;

-- wherein the code capture system comprises a screening system for evaluating the sets of undecoded data as generated by the code capture system, and transmits to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration with respect to one of a plurality of code types;

-- wherein the code capture system comprises a screening system operative to apply a screening process for evaluating the sets of undecoded data as generated by the code capture system, and transmits to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration, said screening process comprising evaluating the proximity to the optical code configuration during the optical readings of the optical code configuration. (Only images are captured near a barcode are stored for transmission.)

As explained above with Claim 32, Postman uses an interrupt to notify the host of available scanned images ready for decoding. Postman also teaches in column 56, lines 11-29 to mask the interrupts when it is not available for decoding, namely the host performing other higher priority processing operations and requiring no interruption. With the above combination, Postman also teaches the feature recited in Claim 40:

-- wherein the code capture system comprises a screening system for evaluating the sets of undecoded data as generated by the code capture system, said code capture system transmitting to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration, said code capture system transmitting sets of undecoded data only when the processing system has completed higher priority processing operations.

The above discussion also shows that Postman teaches the feature recited in Claim 50.

6. Claims 25 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Postman et al. as applied to Claims21 and 32, and further in view of Park (US patent 5,798,516 cited previously.)

Postman teaches the parent Claims 21 and 32. Postman further teaches alternatively transmitting raw image data to PDA for decoding. (column 39, lines 29-32)

However, it does not teach feature related to differences based on comparison with a reference image.

Park teaches the MPEG compression method. (abstract) The MPEG method is the most useful method for compression a sequence of similar images. In the method, the first image is used as a reference and the differences between the reference and its subsequent images are derived. Both the reference and the difference are coded and transmitted.

It is desirable to transfer data in an efficient compressed form to gain transmission speed. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Park's MPEG compression method to compress Postman's captured raw images and

transmit them to Postman's PDA for decoding because the combination provides an efficient storage and transmission. The combination thus teaches the feature:

-- at least one of the sets of undecoded data from the plurality of optical readings of the same code configuration constitutes a reference image and at least one other of the sets of undecoded data constitutes a plurality of differences based on comparison with the reference image.

7. Claims 33 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Postman et al. as applied to Claim 32, and further in view of Actis et al. (US patent 5,144,118.)

Postman teaches the parent Claim 32. However, it does not teach feature related to simultaneous decoding recited in the claims.

Actis teaches a bar code scanning system with multiple decoding comprising:

-- simultaneous decoding of at least two received sets of undecoded data. (column 5, lines 16-38)

It is desirable to speed up decoding of multiple bar codes. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Postman's decoding approach with Actis' teaching of simultaneous decoding to decode at least two received sets of undecoded data because the combination speeds up barcode decoding. The combination thus teaches the feature:

-- wherein said processing system attempts simultaneous decoding of at least two received sets of undecoded data based on at least two optical readings of the same optical code configuration;

-- wherein said processing system has the capability of simultaneously processing more than one set of undecoded data representing more than one optical reading of the same optical code configuration.

8. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Postman et al. as applied to Claim 32, and further in view of Metlitsky et al. (US patent 5,545,886 cited previously.)

Postman teaches the parent Claim 32. However, it does not teach feature related to composite image recited in the claim.

Metlitsky teaches a bar code scanning system comprising:

-- capturing a plurality of images from a target by multiple scans; (column 11, lines 41-52; Each scan generates an image.)

-- constructing a composite image from the captured images. (column 11, lines 41-52)

It is desirable to enhance reliability of decoding a barcode. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Metlitsky's teaching to make a composite image from Postman's the predetermined number of captured and stored images for decoding in the host because the combination enhances reliability of decoding barcodes. The combination thus teaches the feature:

-- wherein the processing system constructs a composite image from the received sets of undecoded data from more than one optical reading of the same cede configuration.

9. Claims 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Postman et al. as applied to Claim 32, and further in view of Tymes (US patent 5,157,687 cited previously.)

Postman teaches the parent Claim 32. Postman further teaches using hand operated trigger switch. (column 57, lines 19-22) However, it does not teach feature related to actuator recited in the claims.

Tymes teaches a bar code scanning system comprising:

-- an actuator for initiating operation of the code capture system to generate sets of undecoded data from a plurality of optical readings of the same optical code configuration, and for terminating reading of optical information from an optical code configuration. (column 10, lines 1-27; Trigger 54 is used to activate scanning when it is pulled. Inherently, when it is not pulled, the scanning is stopped.)

It is desirable to have flexibility of manually controlling the interval of capturing barcodes. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Tymes' teaching to include a manual activator in Postman's image capturing device because the combination provides flexibility of barcode capturing. The combination thus teaches the feature:

-- wherein code capture control system is coupled with the code capture system, and comprises an actuator for initiating operation of the code capture system to generate sets of undecoded data from a plurality of optical readings of the same optical code configuration, and for terminating reading of optical information from an optical code configuration when a plurality of sets of undecoded data from a plurality of optical readings of the same optical code configuration have been generated.

When the trigger 45 is pulled, the scanner will continuously capturing one set of data of a barcode image after another. The interval between generating of two adjacent data is inherently a time delay. Thus, the combination also teaches:

-- wherein said actuator is actuated to initiate operation of the code capture control system, and the code capture control system automatically resumes generating sets of undecoded

data from a further plurality of optical readings after a time delay, if the actuator remains actuated.

10. Claims 48 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Postman et al. as applied to Claim 32, and further in view of Feng et al. (US patent 5,783,811 cited previously.)

Postman teaches parent Claim 32 of the list claims in the embodiment cited above. However, it is not evidently clear that the cited embodiment also includes the screening system recited in the listed claims.

Feng teaches a barcode capturing and decoding system comprising:

-- screening process comprising evaluating the contrast obtained from the optical readings of the optical code configuration; (column 15, line 63 to column 16, line 5; The magnitude of changes is the contrast.)

-- screening process comprising evaluating the magnitude of reflections obtained from the optical code configuration. (column 15, line 63 to column 16, line 5)

It is desirable to have efficient decoding of barcodes. This can be achieved with avoid decoding of bad scans. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to include Feng's screening approach in Postman's PC card for capturing barcode images and selecting valid scans to the host for decoding because the combination provides an efficient decoding.

The combination thus teaches the feature:

-- wherein the code capture system comprises a screening system operative to apply a screening process for evaluating the sets of undecoded data as generated by the code capture

system, and transmits to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration, said screening process comprising evaluating the contrast obtained from the optical readings of the optical code configuration;

-- wherein the code capture system comprises a screening system operative to apply a screening process for evaluating the sets of undecoded data as generated by the code capture system, and transmits to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration, said screening process comprising evaluating the magnitude of reflections obtained from the optical code configuration.

11. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (Japan patent JP 02235188 A) in view of Postman et al. (US patent 6,041,374 cited previously.)

With regard to Claim 19, Tamura teaches a coded image capture and decoding system comprising:

-- a capture system comprising (Fig. 1):

- an optical system that captures image data from coded targets, so as to generate a plurality of image data groups each representing information concerning a coded target as a whole; (Fig. 1; page 601; The group of barcodes 30, 31, and 32 are scanned.)

- a first processing circuit, coupled to the optical system, that generates a plurality of undecoded images each based on one of the image data groups received from the optical system, so that the plurality of undecoded images each represents information concerning a coded target as a whole; (circuits 12 and 15 of Fig. 1; page 601)

- an image buffer, coupled to the first processing circuit, that stores the plurality of undecoded images generated by the first processing circuit; (memory 17 of Fig. 1)

-- a second processing circuit, for coupling to the image buffer, that, after the plurality of undecoded images each represents information concerning a coded target as a whole, are stored in the image buffer, and with the second processing circuit having received the plurality of undecoded images from the image buffer so as to have the plurality of undecoded images available at a time for processing, attempts decoding processing of the plurality of undecoded images. (decoder 18 of Fig. 1)

However, Tamura does not teach a host system comprising a non-dedicated second processing circuit for decoding the plurality of undecoded images as recited.

Postman teaches a decoding system comprising:

-- a host system comprising (block 500 of Figs. 23-24):

- a non-dedicated second processing circuit, for coupling to the image buffer, that, after one or more undecoded images each represents information concerning a coded target as a whole, are stored in the image buffer, after a request by the capture system, and with the non-dedicated second processing circuit having received the one or more undecoded images from the image buffer so as to the one or more undecoded images available at a time for processing, attempts decoding processing of the one or more undecoded images. (column 7, lines 25-51; column 34, line 26 to column35, line 58; especially the passage in column 34, lines 26-37; column 51, lines 38-56; The interrupts sent by the PC card is the request. The PDA and personal computer are general-use computers and thus contain no processing circuit dedicated to a

specific application. The circuit under control of CPU and a computer program dynamically changes portion of the CPU circuit to perform a specific job such as decoding at a time.)

As discussed in column 2, lines 3-24, Postman points out the advantage of their system: not being locked into a proprietary technology that can become obsolete in a matter of months in the fast moving world of high tech electronics and providing flexibility of upgrading a barcode decoding system.

It is desirable to facilitate upgrading a barcode decoding system. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to replace Tamura's dedicated second processing circuit with Postman's host system having a non-dedicated second processing circuit to perform the decoding process because the combination improves flexibility of the overall barcode decoding system.

With regard to Claim 20, Tamura teaches a coded image capture and decoding system comprising:

-- a remote capture unit comprising (Fig. 1; page 601; The group of barcodes 30, 31, and 32 are scanned.):

- an image buffer that stores a plurality of undecoded images each representative of a coded target; (memory 17 of Fig. 1)

-- code processing circuitry, communicatively coupled to the processing circuit, selectively directing the processing circuit to decode the plurality of undecoded images, each representative of the coded target. (decoder 18 of Fig. 1)

However, Tamura does not teach a host imaging processing unit as recited.

Postman teaches a decoding system comprising:

-- a host image processing unit, operably coupled to the remote capture unit, (block 500 of Figs. 23-24) the host image processing unit comprising:

- a processing circuit operable to effect decoding of undecoded images; (column 51, line 39 to column 52, line 6; The part of circuit programmed by the barcode decode software.)

-- code processing circuitry, communicatively coupled to the processing circuit, selectively directing the processing circuit to decode the plurality of undecoded images, each representative of the coded target. (column 51, line 39 to column 52, line 6; The part of circuit loaded with the barcode client application 786 is the code processing circuit for directing and controlling the decoding process.)

As discussed in column 2, lines 3-24, Postman points out the advantage of their system: not being locked into a proprietary technology that can become obsolete in a matter of months in the fast moving world of high tech electronics and providing flexibility of upgrading a barcode decoding system.

It is desirable to facilitate upgrading a barcode decoding system. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to replace Tamura's dedicated second processing circuit with Postman's host image processing unit to perform the decoding process because the combination improves flexibility of the overall barcode decoding system.

Allowable Subject Matter

12. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the system of Claim 22 which specifically comprises the following feature in combination of other limitations:

-- wherein said *non dedicated second processing system* selectively *attempts decode processing* of each of said plurality of undecoded images in succession, while *the optlcal system* may be *in a power saving state until expiration of a time interval* before resuming image capture operation.

13. Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the system of Claim 23 which specifically comprises the following feature in combination of other limitations:

-- wherein said *non dedicated second processing system upon successful decoding* of any one of the plurality of undecoded images *ignores notification of a further plurality of undecoded images being in the image buffer* where such further plurality of undecoded images may be of the same coded target from which an undecoded image has just been successfully decoded.

14. Claim 31 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the method of Claim 31 which specifically comprises the following feature in combination of other limitations:

-- wherein the at least five two dimensional images read from the same two dimensional cods are screened and *only two dimensional images meeting the screening requirements are assembled in the image buffer, the non dedicated processor not being signaled if less than two undecoded images have been assembled in the image buffer after screening of the at least five two dimensional images.*

15. Claims 41-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the systems of Claims 41-42 which specifically comprise the following feature in combination of other limitations:

-- wherein the code capture system comprises a screening system for evaluating the sets of undecoded data as generated by the code capture system, and transmits to the processing system those sets of undecoded data that appear to represent a valid optical code configuration

only if more than one set of undecoded data appears to represent a valid optical code configuration.

16. Claim 44 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the systems of Claim 44 which specifically comprises the following feature in combination of other limitations:

-- wherein the code capture system comprises a screening system operative to apply a screening process for evaluating the sets of undecoded data as generated by the code capture system, said screening system transmitting to the processing system only those sets of undecoded data that appear to represent a valid optical code configuration, said *screening process comprising comparing the similarity of the plurality of sets of undecoded data.*

Conclusion

17. THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). The Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 571-272-7431. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-8300 for After Final communications. TC 2600's customer service number is 571-272-2600.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

February 28, 2006

WENPENG CHEN
PRIMARY EXAMINER